CORNELL EXTENSION BULLETIN 951

...what they are CLEANING SUPPLIES ...how to use them

L. J. WILLIAMSON E. C. WARREN J. MACDONALD

Cleaning makes up so much of house care that it is wise to think through what happens in the cleaning process, and the nature of the supplies you will need for different jobs. Let's consider what has to be cleaned away and what cleaning supplies are needed.

WHAT HAS TO BE CLEANED AWAY?	WHAT AIDS ARE NEEDED?
Loose litter and dirt. This makes up most of the cleaning job	Broom, dust cloths, mops, and vacuum cleaner
Sticky spots and film that will dissolve in water. This material usually holds other soil	A damp cloth is usually all that is needed to soften the soil. The dampened film can then be wiped off with dry cloths and paper towels. Soap the spots if necessary
Oily films and spots. These also hold other soil	A cloth dampened with warm water or a fat solvent such as carbon tetrachloride or dry-cleaning solvent can be used. A little soap or synthetic detergent can be added to the water OR A dry powder such as corn meal or fuller's earth, that absorbs the oil, can be sprinkled on and later brushed away

WHAT HAS TO BE CLEANED AWAY?	WHAT AIDS ARE NEEDED?
Films and spots such as tarnish and corrosion that cannot be dissolved by water or fat solvents	Scouring powder or other abrasive materials such as fine steel wool or silver polish can be used. Whiting powder, available at paint stores, is one of the least damaging OR Use a material that reacts chemically with the soil to form a substance that can be washed away. Oxalic acid, which is used for removing rust stains, is an example.
Films such as wax that have been added for protection. They may have to be removed because they have been damaged or because a new finish is to be added	Each film has its own special solvent. Information about what to use and how to use it can be found at stores that sell the protective preparations.

CHARACTERISTICS OF CLEANING SUPPLIES

Water

Water will dissolve most household soils better if it is warm. It will not harm many materials, especially if you use it in small amounts such as on a dampened cloth, and if you promptly wipe up or dry away excess water. The addition of soap or other cleaning agent such as a synthetic detergent helps with the cleaning. Some of these emulsify or "break up" fat into particles which are more easily removable.

Alkaline water solutions

Solutions of soap, of many water softeners, and of the general-purpose synthetic detergents have an alkaline or lye-like property that helps with cleaning. Alkaline solutions feel slippery. They should be made only strong enough for the job and should be rinsed away at once. Alkalinity damages some fabrics, notably wool and other animal fibers. It is also damaging to aluminum and dulls some dyes. Alkaline solutions are necessary for many cleaning operations so you should learn to use them properly.

Acid water solutions

Darkened aluminum, iron rust, and hard water scale are among the soils that are treated with acid solutions. Darkened pans become bright when acid foods such as vinegar, tomatoes, lemons, and other acid fruits are cooked

in them. Foods are not harmed by this process. Solutions of acids such as oxalic and hydrochloric, sometimes called muriatic, acid, are also available. Commercial preparations for cleaning copper contain acid products.

Because acid solutions damage many materials, be careful to use only the acid recommended, in the concentrations suggested, and to follow directions scrupulously.

Soaps

There are mild soaps for delicate fabrics and light cleaning, and general-purpose soaps, to which products are added to increase their cleaning ability. Many of these products simply make the mild soap more alkaline. If your water is hard, use a water softener for washing and rinsing, to prevent soap curd that leaves surfaces and fabrics sticky and dull.

Synthetic detergents

In recent years new detergents that behave like soap but do not curd in hard water have replaced soap for many home cleaning jobs. They are called synthetic detergents, or "syndets," to distinguish them from older detergents, like soap. Synthetic detergents now make up more than half of the cleaning agents on the market. Frequently they are called simply "detergents." They are sold under many different brand names.

There are mild synthetic detergents and general-purpose ones, just as there are two groups of soap products. The mild detergents are neutral or only slightly alkaline in their action. The general-purpose detergents have alkaline builders added to them to increase their ability to remove dirt. All synthetic detergents remove grease and oils rapidly and completely. This action accounts for their tendency to dry out the skin and to cause well-cured frying pans to stick.

Fat solvents

Carbon tetrachloride and other dry-cleaning solvents are necessary for spot removal and for cleaning materials that will be damaged by water. Many fat solvents are dangerous to use. The fumes of carbon tetrachloride are poisonous and a serious health hazard if they are inhaled. *Never use gasoline.* It ignites easily and is explosive. There are other dry-cleaning solvents sold for home use that are safer than gasoline. Many of them are fire hazards, however, and should be used with care.

Read the label carefully and work with only a little solvent at a time, preferably out of doors or with windows open. Be sure that pilot lights and cigarettes are put out.

Fat absorbents

Dry powders, such as corn meal, fuller's earth, and talcum, take up or absorb considerable oil and fat. Dirt that is absorbed can then be brushed away. Absorbents are useful for removing spots on fabrics and wallpaper, and for cleaning furs, rugs, carpets, and greasy collars. Commercial cleaning products which are brushed into rugs and carpets contain some fat absorbents. Fine powders are difficult to remove completely.

Abrasives

Scouring powders and other products that scrape or polish away soil clean by abrasion. Coarse, harsh abrasives will damage most surfaces. It is better to start with a soft, fine abrasive such as whiting or silver polish and to use a harder one such as fine steel wool only when absolutely necessary. You can tell something about the harshness of a cleaner by rubbing the powder between your fingers or between coins to see if the coins are scratched. Sand and sandpaper are very harsh abrasives.

Many scouring powders contain soft abrasives and cleaning agents such as a synthetic detergent. They can be used for cleaning cooking utensils and metal sinks but should not be used on enameled sinks, bathtubs, and toilet bowls. Enameled surfaces are made of glass and are easily scratched. These fine scratches hold soil and stain. Once the surface is scratched, it soils easily and is difficult to clean. Clean enameled surfaces with a detergent and water.

Special products

Brand-name products for jobs such as cleaning woodwork, washing windows, cleaning metals and removing burned-on grease from ovens are usually mixtures of common household cleaning materials. For example, a glass cleaner is likely to consist of water, a synthetic detergent, and whiting or some other mild abrasive powder.

Products for cleaning metals contain an abrasive and a detergent. Those for brass and copper often contain a little mild acid. Products for cleaning ovens and stove burners are usually strong lye-like liquids or pastes. They are destructive to almost all household materials and must be handled with great care.

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CORNELL EXTENSION BULLETIN 952

how to clean WALLPAPER, WALLS, & WOODWORK

L. J. WILLIAMSON E. C. WARREN J. MACDONALD

WALLPAPER

General cleaning for both washable and nonwashable wallpaper involves frequent light dusting with a vacuum cleaner attachment, a soft brush, or a clean cloth over a clean dry mop or broom. It is usually better to start at the top of the room and brush downward. If there are cobwebs, however, remove them with a lifting stroke. They are greasy and may cause streaking if brushed downward.

For heavily soiled surfaces, the method of cleaning depends on the type of paper. Washable paper may be washed gently with cold water and a mild soap. Wet the area to be cleaned first, then apply suds gently with a sponge. Rinse off the suds with a sponge wrung out of cold water. Avoid rubbing and unnecessary wetting.

Both types of paper can be cleaned by commercial or home-made wallpaper cleaners.

One popular recipe for a wallpaper cleaner follows:

4 teaspoons baking soda — 2½ tablespoons household ammonia
2 cups flour — 1¼ cups water

Stir the soda into the flour. Mix the ammonia with the flour and soda, and add the water. Beat the mixture until smooth. Steam it in a double boiler for 1½ hours, and keep it covered until the cleaner is cool enough to handle. Then knead it in your hands until it is as smooth and soft as art gum.

To use a wallpaper cleaner:

1. Test the cleaner on an inconspicuous spot to see how it will work.
2. Start at the top of the room and rub gently with a downward stroke, kneading the cleaner as you work.
3. Overlap the strokes to prevent streaks.
4. Dust with a soft cloth to remove crumbs.

TO REMOVE SPOTS OR STAINS FROM WALLPAPER

Spots and stains are not easy to remove from wallpaper. Immediate treatment, however, is usually more successful than if the stain is allowed to penetrate. The following table contains suggestions for possible treatment of this kind of soil:

Spot or stain	Nonwashable paper	Washable paper
Grease	If fresh, it may be partly removed by applying a clean blotter to the spot, and then pressing over the blotter with a warm iron	Same
	Then make a paste of fuller's earth or other absorbing powder and carbon tetrachloride	
	Cover the spot with this mixture and let it remain until dry. Remove with a cloth dampened with carbon tetrachloride	Treatment may be followed by washing
	Caution: Some pigments "bleed" when carbon tetrachloride is applied. Test on a small inconspicuous area first	
Crayon	Scrape off as much of the crayon as possible with a table knife. Sponge lightly with a cloth dampened with a fat solvent such as carbon tetrachloride, acetone, or denatured alcohol	Same
	or	
	Apply a blotter to the crayon spots and press with a warm iron	Same

Spot or stain	Nonwashable paper	Washable paper
Ink	Blot up surplus quickly. Apply an absorbent powder such as cornstarch or table salt. Brush off as fast as it takes up the ink. Repeat	Same
	An ink eradicator may be used. Several light applications are usually preferable to an extended one **Caution:** Ink eradicator may remove color from the paper. Test an inconspicuous area	It may be possible to apply a chlorine bleach, carefully. Pat spot gently with a cloth dampened with bleach. Wash bleach off with water. Avoid rubbing

PAINTED WALLS AND WOODWORK

The quality and condition of the paint should be considered before you decide to wash it. Any paint can be destroyed by rubbing, by strong cleaning agents, or by abrasive powders. Poor quality paint, and soft or flaky paint will sometimes wash away.

To wash painted surfaces that are in good condition:

1. Use a mild soap or detergent solution, or one of the soap jelly preparations described on page 4.
2. Have on hand two containers, one for the soapy water and one for the rinse water.
3. Start at the bottom of the wall and work upward.
4. With a soft cloth or cellulose sponge, apply the wash water or jelly to a small area at a time.
5. Rinse this area carefully. Be sure to squeeze the excess water from the cloth or sponge each time.
6. Change the rinse water frequently.
7. Avoid unnecessary rubbing which may soften the paint.
8. Dry with a soft clean cloth.

Many commercial paint cleaners are excellent if you follow directions carefully. Some cleaners do not need to be rinsed off.

Soap jelly cleaners

Soap jellies are easy to apply and are excellent cleaning agents. Other products are sometimes added to improve the cleaning action. Whiting can be mixed with a little jelly to remove stubborn spots, and glue is often added to speed the cleaning action of the soap.

SOAP JELLY

Dissolve 1 cup soapflakes in 4 cups boiling water } Use when cool
Pour into wide-mouthed glass jars { and jelled

WHITING AND SOAP JELLY PASTE

4 parts fine whiting }
1 part soap jelly { Mix well, apply with a soft cloth, rub lightly

SOAP JELLY AND GLUE

3 cups soapflakes
2 quarts boiling water
4 tablespoons (1 ounce) granulated glue (casein and some synthetic glues are not satisfactory) softened in
1 cup cold water for 1 hour

Add the softened glue to the hot soap solution, and stir until dissolved. Let the mixture stand until it jells.
Apply with a damp cloth or sponge to a small area. Rinse the area and wipe it off before the solution dries.

CAUTION: Soap jelly and glue solution is difficult to remove if it dries on the surface or runs onto a dry soiled surface.

Solutions of synthetic detergents can also be beaten into a foam that cleans with little wetting of materials. The foam can be used for cleaning rugs, upholstered furniture, and other fabrics.

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CORNELL EXTENSION BULLETIN 953

how to dust & clean FURNITURE

L. J. WILLIAMSON E. C. WARREN J. MACDONALD

General Suggestions

When you dust furniture, be sure to use clean dust cloths. A dusty cloth contains hard particles of dust, which will scratch the surface of the furniture. Clean cloths and dusting paper will pick up surface dust and can be used to polish the surfaces. Keep clean, soft dust cloths in a closed jar.

There are on the market, cloths which have been treated with some product that helps hold the dust to the cloth. These cloths can be made at home: place a clean, soft cloth in a 1-quart jar with a screw top. Add a few drops of oil or furniture polish. Let the cloth stand in the jar for a day or two before using it. Usually the cloth can be washed a few times before more oil has to be added. These "dustless dusters" can be used on oiled, shellacked, or varnished furniture. However, it is better to use dry cloths for dusting waxed surfaces. Wax may be softened by oil and hold the dust.

Cloths chemically treated with silicones are available in stores. Many women report they need to dust less frequently when they use these cloths.

The dusting brush of the vacuum cleaner will loosen dust from the more intricate parts of furniture and remove dust that has settled on surfaces.

There are silicone waxes and polishes that give a finish which tends to repel dust. The silicone will have to be removed with turpentine or other solvent before a new paint or other finish is applied.

You can keep dusting to a minimum if you replace or clean furnace filters when they are soiled, and stir up as little dust as possible when cleaning.

Wood furniture

Furniture care includes dusting, polishing, waxing if desired, and removing scratches and spots. Most furniture finishes can be wiped with a damp cloth without damage. A little boiled linseed oil and turpentine added to warm water will improve the appearance of most finishes. You can buy the turpentine and boiled linseed oil at a paint store.

To prepare and use the furniture wash:

Place 1 tablespoon of turpentine, 3 tablespoons of boiled linseed oil, and 1 quart of hot water in the upper part of a double boiler.

CAUTION: Do not place the mixture directly on the stove as the turpentine is inflammable.

Fill the lower part of the double boiler with boiling water to keep the mixture warm. Wet a soft cloth with the solution and apply to the surface. Wipe the surface dry and polish with a dry soft cloth. Replace the solution with a fresh supply when it becomes soiled. Furniture and other woods that have been treated with boiled linseed oil can be cleaned with this wash and more oil can be rubbed into the wood as needed.

Reed, cane, and wicker furniture

Reed, cane, and wicker furniture can be dusted with a stiff brush or a vacuum cleaner attachment. If this type of furniture becomes badly soiled, it can be washed with a cloth wrung out of lukewarm, mild, soapy water, then wiped promptly with a cloth wrung out of clear water. Any good detergent can be used. Care should be taken not to soak the furniture.

Upholstered furniture

For ordinary cleaning, remove cushions and give the chair body a careful brushing with a whiskbroom or vacuum-cleaner brush. If you use a whiskbroom, let the dust settle, then wipe the chair with a damp cloth.

Cushions can be brushed in the same way unless they are filled with down, in which case the vacuum cleaner should not be used. Any light grease spots should be removed with a non-inflammable cleaning fluid after the chair has been dusted.

Shampooing upholstery

Soiled upholstery or tapestry, denim, rep, and frieze may be cleaned by shampooing with soap or a commercial preparation. Choose a day when you can dry furniture outdoors.

1. Remove all dust with a vacuum cleaner.
2. Remove all spots, such as grease, by recommended methods.

3. Prepare a foam from soap jelly or detergent (see below).
4. Rub a little of the lather on an inconspicuous spot to determine whether the colors are fast.
5. With a soft brush or cloth, apply the lather to a small area. Use a circular motion and keep a good lather on the surface.
6. Remove surface lather with a spatula. Rinse off the remaining lather by wiping with a clean cloth wrung dry out of warm water. Repeat the rinsing two or three times. The water should be changed as soon as it shows soil.
7. Apply the lather to another small area, overlapping with the first area to prevent the formation of rings. Rinse.
8. Dry furniture out-of-doors in the shade or indoors with all windows open or in the draft of an electric fan.

Soap jelly cleaners

Soap jellies are easy to apply and are excellent cleaning agents. Other products are sometimes added to improve the cleaning action. Whiting can be mixed with a little jelly to remove stubborn spots, and glue is often added to speed the cleaning action of the soap.

SOAP JELLY

Dissolve 1 cup soapflakes in 4 cups boiling water } Use when cool
Pour into wide-mouthed glass jars } and jelled

WHITING AND SOAP JELLY PASTE

4 parts fine whiting } Mix well, apply with a soft cloth, rub lightly
1 part soap jelly }

SOAP JELLY AND GLUE (for painted surfaces only)

3 cups soapflakes
2 quarts boiling water
4 tablespoons (1 ounce) granulated glue (casein and some synthetic glues are not satisfactory) softened in
1 cup cold water for 1 hour

Add the softened glue to the hot soap solution, stir until dissolved, and let mixture stand until it jells. Apply with a damp cloth or sponge to a small area. Rinse and wipe the area before the solution dries.

CAUTION: Soap jelly and glue solution is difficult to remove if it dries on the surface or runs onto a dry soiled surface.

Solutions of synthetic detergents can also be beaten into a foam that cleans with little wetting of materials.

Removing spots from furniture

White spots on a wood surface are usually caused by hot dishes or water. You can usually remove them by wiping the surface with a piece of cloth wrung from water to which a little ammonia has been added. Or rub with your finger or a piece of flannel dampened with spirits of camphor or essence of peppermint. Sometimes you can remove the spot by laying a piece of blotting paper over the spot and pressing it with a warm iron.

Alcohol spots on furniture may disappear if they are rubbed with a soft cloth or with your fingers while the spots are still fresh. If spots are old, rubbing with boiled linseed oil or with rottenstone and linseed oil may renew the finish.

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how to care for the GLASS & METALS in your home

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WINDOWS

Use clear warm water to clean windows. Soap is not advised for cleaning windows, because it streaks. Many of the synthetic detergents are satisfactory, however. Dip a soft cloth or sponge in the water, wring it as dry as possible, and wash the glass. Dry the glass with a soft, dry, lintless cloth, a clean damp chamois, crumpled newspaper, or a squeegee, wiping the squeegee after each stroke. Try not to work in direct sunlight since windows will dry too rapidly and show streaks.

For very soiled windows, wipe off some of the dirt with a damp cloth or paper. Then wash with one of the following mixtures:

1 tablespoon household ammonia to 1 quart warm water, **or**

½ tablespoon kerosene to 1 quart warm water, **or**

3 tablespoons denatured alcohol to 1 quart warm water

Use a soft dry cloth, a clean damp chamois, or a squeegee to polish. Take care not to spill ammonia or alcohol solution on the sills since these may injure the finish.

A paste of powdered whiting and water can also be used to clean windows. Apply paste to glass, let it dry slightly, then remove with a soft lintless cloth.

Commercial preparations for cleaning windows are also available. Some of these are sprayed on and then the glass is polished with a dry cloth.

To remove spatters of paint or varnish from windows, rub off the spots with a cloth dampened with turpentine or paint remover, or scrape them off with a putty knife or razor blade.

When windows are being washed, you may want to wipe off the sills, sashes, and frame with a clean damp cloth.

Dusting will be easier if you wax sills and sashes with a colorless liquid wax for extra protection.

PORCELAIN SINKS, BATHTUBS, AND TOILET BOWLS

Toilet bowls and the smooth, glazed finish on sinks, bathtubs, and wash bowls are made of porcelain, which is a type of glass. Since the surface is glass, care must be taken to prevent chipping. Use mild abrasives only, because harsh abrasives and scouring powders scratch the finish. The scratched surface collects dirt and becomes discolored. The more you scrub to remove this dirt, the more the finish gets scratched. When the finish has been damaged in this way, there is little that can be done to restore it.

To clean these surfaces, wash them with soap or other detergent and water, then rinse and dry them. If an abrasive is needed, use the finest powdered whiting. Powdered whiting is available at drug and paint stores. Some homemakers prefer to use a cream made of whiting and soap jelly.

WHITING AND SOAP JELLY PASTE

Dissolve ½ cup soapflakes in 1 cup boiling water } When cool
Pour into wide-mouthed glass jar { and jelled, add

1 cup fine whiting Mix well, apply with a soft cloth, rub lightly.

The soap scum that forms on lavatories and bathtubs may be removed by washing with synthetic detergents.

Rust spots, if they have not penetrated through the hard outer surface, may be removed by one of the following methods. If the finish is acid resistant, such as porcelain, rub the spot with the cut surface of a lemon and rinse thoroughly. A 5 per cent solution of oxalic acid (poison) may also be used, and allowed to stand for a few minutes. Carefully rinse off the solution to prevent the acid from marring the porcelain.

METALS

Care of Silver

Tarnish is caused by sulphur in the air, or in tissue paper in which the silverware has been wrapped. Sulphur in eggs and other foods will darken spoons and fork tines. Small black spots are often caused by salt or by other compounds containing chlorine which are used for dishwashing.

To remove silver tarnish, polish with jeweler's rouge, whiting, or a commercial silver polish. Dips for rapid cleaning of silver are made of several different products. Because ingredients vary, it is not possible to describe how to use them nor to predict the results. Manufacturer's directions must be followed carefully. Metal pieces that are placed in the dish water for cleaning silver behave like aluminum in the electrolytic process.

The electrolytic method is a quick, easy way to clean tarnished silver.

CAUTION: Oxidized silver (with dark decoration) or flatware with hollow handles must not be cleaned by this method.

Use a large enameled kettle or bright aluminum pan. If an enameled kettle is used, place a bright aluminum sheet or foil, a shallow aluminum utensil, or a piece of magnesium alloy in the bottom.

To clean the silver, fill the utensil with enough water to cover all the silver. To each quart of boiling water add 1 teaspoon of salt, 1 teaspoon of baking soda, and ½ teaspoon of whiting. Stir with a wooden spoon. Place the silver in the boiling solution so that each piece touches either the aluminum or another piece of silver in contact with the aluminum. Boil from 30 seconds to 5 minutes depending upon the amount of tarnish. Remove the silver with tongs or two large forks and place on a soft cloth. Add a second lot of silver and repeat. With a clean, soft cloth, polish the silver to the desired brilliance.

The amount of silver lost by this method is less than by the friction method of polishing.

The aluminum used in the cleaning becomes coated with a dark deposit. A cooking utensil used for this purpose can be made bright again by cooking acid fruits, such as rhubarb, tomatoes, or apples, in it. The deposit can also be removed by boiling a weak vinegar solution in the pan and rubbing the surface with fine steel wool and soap.

Care of other metals

The first three steps in the cleaning of household metals are:

1. Wash with a synthetic detergent or soap and warm water and scrape away softened material with a wooden spoon or a plastic or rubber scraper.
2. Dry with a cloth or paper towel.
3. Polish with a drying cloth or with a flannel cloth.

If food or other material is not cleaned away by this method these are the steps to take:

1. Soak in water to which is added synthetic detergent, soap, vinegar, or soda, depending on the metal. (See table, p. 4.)
2. Scrape away the softened material with a wooden spoon or rubber scraper.
3. If more scraping is needed, use a small wooden stick or a clothespin.
4. If more scouring is required, use fine steel wool (000) or a mild scouring powder.

CAUTION: Do not scour tin- and chromium-plated surfaces in this manner. If they are scratched, the metal under the plating corrodes rapidly.

INDIVIDUAL CARE OF COMMON HOUSEHOLD METALS

Metal	Cleaning and polishing	Special care
Aluminum	Mild scouring powders. Cooking acid foods such as tomatoes, rhubarb	Avoid soaps, lyes, and other strong alkalis since they may eat through. Do not soak for long time since aluminum may pit if it stands in water
Brass and copper	Sprinkle on salt and a little vinegar, rub, rinse, and dry. Or Use a commercial cleaner	Use oil and rottenstone for a dull finish; whiting and denatured alcohol for a bright polish
Iron	3 tablespoons baking soda and 1 quart of warm water. Scrub	To prevent rusting and sticking, season with unsalted fat at low setting on stove for 30 minutes. Cleaning with soapy water or synthetic detergent may remove the "seasoning" so that sticking occurs
Enameled ware	Treat as glass	Avoid high heat, rapid cooling, chipping, scratching
Monel	Takes any common polish	
Pewter	Clean with whiting in denatured alcohol for bright finish; rottenstone and oil or oil alone for dull finish	Corrosion can be removed with fine steel wool (000). If very black send to professional metal cleaner or jeweler for cleaning
Steel	Stainless: takes any common polish; other steel: Treat as iron	
Tin	If more than soap and water needed, use soda and hot water as for iron	Avoid scratching as tin is plated on iron
Zinc	Very mild scouring powder, little rubbing	Never use harsh cleaners

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CORNELL EXTENSION BULLETIN 955

how to clean & care for PLASTICS

L. J. WILLIAMSON E. C. WARREN J. MACDONALD

In order to clean and care for plastic articles you should understand their characteristics. All plastics fall into two main groups.

Thermosetting plastics are set into a firm shape when they are manufactured. They may warp or crack but they do not become soft and pliable as they become warmer. Handles of cooking utensils and many plastic dishes are examples of thermosetting materials. They can be used in hot water, and in general will take temperatures to about 300°F. They cannot be used in direct contact with heat.

Thermoplastic plastics become soft when heated and stiffer when cooled. This change takes place as often as the process is repeated. Many household articles, such as mixing bowls and measuring cups and spoons, are thermoplastic. Some of them are damaged when washed in dishwashers. Others can take the high temperature of washing and drying cycles.

In both groups of plastics are many that are resistant to breakage, scratching, staining, and chemical action. They can be washed with any of the cleaning agents used in water. Many are not damaged by acids and alcohol spilled on them, but some are damaged by chlorine bleaches.

Unless the label gives other information about a plastic article, these precautions are important:

1. Wash with soap or other detergent, rinse, and dry away extra water at once. A damp cloth will often do the cleaning job.
2. Avoid using abrasive powders and do not slide rough objects over the surface.
3. Do not spill bleaches and dry-cleaning liquids on them. Wipe up at once any alcohol that is spilled.
4. Handle rigid articles with care. They may break easily and may warp if they become too hot.

Household Article	Plastic	Characteristics
Counter coverings and floor coverings	Vinyl	Thermoplastic Manufactured in a variety of colors. Light in
Counter tops, table tops, flooring	Laminated plastics	Thermosetting plastics such as phenolics, may be used. Produced in a wide range of colors or sir Light in weight. Strong. Durable
Curtains, draperies Upholstery fabrics	Vinyl	Thermoplastic In fabricated form is available in transpar or opaque colors. As a coating on cloth limited resistance to abrasion
Curtains, draperies Upholstery Boucles	Nylon	Thermoplastic, but recent products not dam water. Range of colors. High tensile strength
Fabric coverings Lampshades	Cellulosics Nitrates	Thermoplastic Available in wide range of colors. Take Light in weight. Tough. Flammable
Kitchenware Flexible bowls Ice cube trays	Poly- ethylene	Thermoplastic Oderless, tasteless. Flexible. Light weight. Milky translucent in pastel colors
Picnic dishes Refrigerator storage boxes	Poly- styrenes	Thermoplastic Available in wide range of brilliant colors, transparent form. Has metallic ring when ta Heat resistance varies from 150° to 220° F.
Measuring spoons, strainers, cups	Cellulose Acetates	Thermoplastic Colorful. May not be entirely odor- or tast
Handles, knobs of cooking utensils Handles, frames of electric appliances	Phenolics	Thermosetting plastics Available in dark or mottled colors. Good r transmission. Good electric insulators
Tableware Plates	Melamines	Thermosetting plastics Wide range of colors. Odorless and tastele Temperature range from —70° to 210°F.
Wallpaper Wall coverings	Vinyl	Thermoplastic Applied as a film to paper or cloth. Flexible

	Resistant to	Damaged by
weight. Resilient	Abrasion, acids, alcohols Most food stains	Boiling water, hot dishes Direct flame Moth repellents
melamines, etc., nulated veneers.	Boiling water Acids, alkalies, oils Common chemicals	Direct heat
ent, translucent, or paper has a	Water, sunlight Weathering, dirt Acids, alcohols, most food stains	Boiling water Direct flame Moth repellents
aged by boiling	Freezing temperatures Household chemicals Common solvents, oils and greases	Weathering, mineral oils Coffee, tea, certain vegetable and fruit juices
lustrous finish.	Weathering Household chemicals	Abrasion, heat Fire (flame)
	Chemicals, food acids Household solvents Freezing	Boiling water Abrasives
also in colorless pped. Non-toxic.	Ordinary chemicals	Cleaning fluid Acetones, citrus fruit Oils, boiling water Impact
e-free		Boiling water Acetone, abrasives
esistance to heat	Boiling water Impact Mild acids Solvents and oils	Flame Oven temperatures
ss.	Light, acids, alkalies Boiling water, oils Household chemicals	Abrasives Flame Oven temperatures
and light weight	Water Most stains	High temperature Naphtha

In advertising, in magazine articles, and on labels you will find many new names applied to the plastics. Among them are vinyl, polystyrene, melamine, and laminated. Many describe the chemical group to which the plastic belongs. The term "laminated" describes a kind of construction in which plastic-impregnated cloth, paper, or other materials are processed into a sheet, under heat and pressure. Usually thermosetting plastics are used. If the top layer is of metal the material will be resistant to direct heat.

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